Exit and Entry in Niagara Viticulture 1997 – 2010

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Abstract

**Research Objectives:** The Niagara wine producing region of Canada has experienced significant growth and substantial changes since the early 1990s and now comprises the majority of a $1 billion dollar grape and wine industry within the Province of Ontario. Investing in a vineyard however, in any region of the world, can be a very costly endeavour. Fixed start-up costs are relatively high, largely due to land prices and the infrastructure required. In addition, vineyard establishment is usually associated with at least three years of variable costs, on top of the high fixed costs, before full production is achieved. Future cash flows are also risky in cool climate areas such as the Niagara region due to significant weather variability and disease. These issues combine to make the decision to invest in a vineyard risky in nature.

The objective of the study is to examine the financial decision to establish (enter) or abandon (exit) vineyard production in the Niagara region over the time period of 1997 through 2010 for a number of different grape varietals and under the assumption of either premium or lower priced grape production. A primary goal will be to examine the future viability and sustainability of grape supply in the Niagara region, given the current grape pricing regime.

**Data and Methodology:** While the concept of hysteresis had been long known to affect many economic decisions, Dixit (1989, 1991) and Dixit and Pindyck (1994) were the first to explicitly model economic hysteresis within a real options framework. The approach recognizes that investment (entering) or disinvestment (exiting) decisions, which essentially require irreversible financial commitment in the face of uncertain returns, can be characterized as American call and put options respectively. Prior applications of the framework include: Price and Wetzstein (1999) for Georgia Peach production; Isik et al. (2003) as applied to agribusiness investment; Tauer (2006) in terms of dairy production; Luong and Tauer (2006) for coffee growing in Vietnam and Cyr et al. (2010) with respect to Texas vineyard establishment. In the current study the Dixit and Pindyck (1994) framework is used to solve for entry and exit grape prices for the Niagara region over several years. Establishment and production costs for various grape varieties are obtained from Ontario Ministry of Agriculture, Food and Rural Affairs reports combined with anecdotal evidence from Niagara vineyard operators.

**Description of Results:** The results of the study indicate that the substantial growth in vineyard investment in the Niagara region, from the late 1990's through mid 2000 was consistent with rational financial investment decisions. However, as a result of rising land prices and operating costs, current grape prices appear to now be close to the theoretical exit prices for many grape varieties, particularly in terms of premium grape production.
**Potential for Discussion:** The study is of interest to the greater Niagara grape producing industry, and attempts to characterize, through a fairly rigorous economic analysis, the current environment for vineyard establishment and continued grape production. Given the growing economic importance of the grape and wine industry to the province of Ontario, we believe the potential for valuable discussion of the results is great.